PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2002-199141
(43)Date of publication of application : 12.07.2002

(51)Int.Cl. H04N 1/00

(21)Application number : 2001-301049
(22)Date of filing : 28.09.2001

(71)Applicant : CANON INC
(72)Inventor : TAKEDA TOMOYUKI
NAKAMURA NAOMI
OKAMURA KOJI
NAKAO MUNEKI

(30)Priority

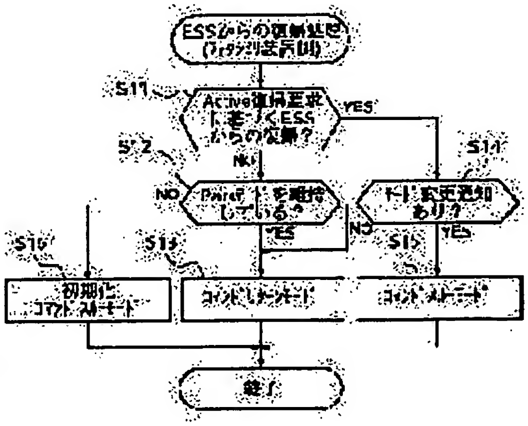
Priority number : 2000316509 Priority date : 17.10.2000 Priority country : JP

(54) EQUIPMENT HAVING COMMUNICATION FUNCTION, METHOD FOR CONTROLLING THE SAME, AND STORAGE MEDIUM WITH PROGRAM FOR CONTROLLING THE EQUIPMENT STORED THEREON

(57)Abstract:

PROBLEM TO BE SOLVED: To provide equipment having a communication function, capable of efficiently switching mode at stand-by, to provide a method for controlling it and a storage medium having a program for controlling the equipment stored thereon.

SOLUTION: When being restored to a normal mode from power saving stand-by (ESS), as the result of the occurrence of a restoring main factor from ESS, when the returning main factor is as a result of the occurrence of 'Active' restoring request to a 'Bluetooth' controller and the mode change information of Active return occurs, a command-through mode is set, in order to send a command from an information processing terminal to an event control task. When the mode change information



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of Active restoration does not occur, however, since communication cannot be restored, a command return mode is kept as it is. If the restoring main factor is not the occurrence of an Active restoring request and a 'Park' mode is kept, the command return mode is generated. If the Park mode is not kept, a Bluetooth control task is initialized, and an operation mode is changed to the command-through mode. After that, starting of the information processing terminal is awaited.

LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

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[Date of extinction of right]

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CLAIMS

[Claim(s)]
[Claim 1] The information processor which can perform directions of operation to the image processing system concerned by wireless, and the usual power consumption mode which usually transmit and receive data in the state of power consumption, The wireless mode means for switching which switches said information processor and the low-power mode which transmit and receive some data among said data in the state of a low power, Usually, the standby status-switching means which switches a standby condition and a power-saving standby condition with less power consumption than this usual standby condition, In the condition that said mode is said low-power mode, and said standby condition is in said power-saving standby condition The image processing system with which said mode is characterized by said standby condition having said power-saving standby condition to said power control means controlled to usually switch to a standby condition from said low-power mode when [said] usually switched to power consumption mode.
[Claim 2] Said information processor is an image processing system according to claim 1 characterized by not performing an inquiry or directions of operation of the operating state of the image processing system concerned when said mode is said low-power mode.
[Claim 3] When said mode is said low-power mode, instead of an inquiry of the operational request from said information processor, or directions of operation It has a false demand generation means to generate an inquiry and directions of operation of false operating state. The image processing system concerned The image processing system according to claim 2 characterized by performing actuation according to said false movement directive demand, and generating the response according to an inquiry of said false operating state when said mode is said low-power mode.
[Claim 4] Said false demand generation means is an image processing system according to claim 3 characterized by not generating an inquiry and directions of operation of said false operating state when said standby condition is in said power-saving standby condition.
[Claim 5] Said standby condition by said power control means from said power-saving standby condition, when [said] usually switched to a standby condition While performing actuation according to the directions of operation received from

said information processor While generating the response according to the inquiry of operating state which received from said information processor Said standby condition ** [according to / said power control means] from said power-saving standby condition, when [said] usually switched to a standby condition An image processing system given in either of claims 3 or 4 characterized by generating the response according to an inquiry of said false operating state while performing actuation according to said false directions of operation.
[Claim 6] The radio with said information processor is an image processing system according to claim 1 to 5 characterized by being based on Bluetooth specification.
[Claim 7] It is the image processing system according to claim 6 which power consumption mode is the Active mode of Bluetooth specification, and is usually characterized by said thing [that said low-power mode is either the Sniff mode of Bluetooth specification, Hold mode or Park mode].
[Claim 8] The information processor which can perform directions of operation to the image processing system concerned by wireless, and the usual power consumption mode which usually transmit and receive data in the state of power consumption, The wireless mode change-over step which switches said information processor and the low-power mode which transmit and receive some data among said data in the state of a low power, Usually, the standby status-switching step which switches a standby condition and a power-saving standby condition with less power consumption than this usual standby condition, In the condition that said mode is said low-power mode, and said standby condition is in said power-saving standby condition Said mode from said low-power mode, when [said] usually switched to power consumption mode The image processing system control approach that said standby condition is also characterized by having said power control step controlled to usually switch to a standby condition from said power-saving standby condition.
[Claim 9] In the storage which stored the program including the image processing system control approach which controls an image processing system which can realize a computer said image processing system control approach The information processor which can perform directions of operation to the image processing system concerned by wireless, and the usual power consumption mode which usually transmit and receive data in the state of power consumption, The wireless mode change-over step which switches said information processor and the low-power mode which transmit and receive some data among said data in the state of a low power, Usually, the standby status-switching step which switches a standby condition and a power-saving standby condition with less power consumption than this usual standby condition, In the condition that said mode is said low-power mode, and said standby condition is in said power-saving standby condition The storage with which said mode is characterized by said standby condition having said power-saving standby condition to said power control step controlled to usually switch to a standby condition from said low-power mode when [said] usually switched to power consumption mode.
[Claim 10] It is equipment characterized by to have the 2nd change means which changes a change means, and the 1st communicate mode and 2nd communicate mode about said communication facility which changes the 1st standby mode and

2nd standby mode at the time of standby in equipment equipped with communication facility, and to be carried out by the change by said 1st change means and the change by said 2nd change means interlocking. [1st]
[Claim 11] Said the 1st standby mode and said 2nd standby mode are equipment according to claim 10 characterized by being the mode in which power consumption differs, respectively.
[Claim 12] Said the 1st communicate mode and 2nd communicate mode are equipment according to claim 10 characterized by being the mode in which power consumption differs, respectively.
[Claim 13] Equipment according to claim 10 characterized by performing the change by said 1st change means in case the change by said 2nd change means is performed.
[Claim 14] Said 2nd change means is equipment according to claim 10 characterized by performing the change concerned when starting the communication link with other equipments using said communication facility.
[Claim 15] Said communication facility is equipment according to claim 10 characterized by being a radio function.
[Claim 16] Said communication facility is equipment according to claim 10 characterized by being based on Bluetooth specification.
[Claim 17] It is equipment according to claim 16 which said 1st communicate mode is the Active mode of Bluetooth specification, and is characterized by said 2nd communicate mode being either the Sniff mode of Bluetooth specification, Hold mode or Park mode.
[Claim 18] A reply means to answer a letter in the response corresponding to the demand concerned according to the demand from other equipments connected using said communication facility, It has a processing change means to change alternatively the 2nd processing which notifies said demand to said reply means instead of equipment, and to perform it. said -- others -- the 1st processing which notifies the demand from equipment to said reply means -- said -- others -- Said processing change means is equipment according to claim 10 characterized by changing said the 1st processing and said processing of the 2nd according to the change by said 2nd change means.
[Claim 19] Said 2nd processing is equipment according to claim 18 characterized by being what is performed at the time of said 1st standby mode, and not performed at the time of said 2nd standby mode.
[Claim 20] It is equipment according to claim 18 which has a distinction means to distinguish whether it is that the change by said 1st change means was performed, according to the change by said 2nd change means, and is characterized by said processing change means changing said the 1st processing and said processing of the 2nd according to the distinction result by said distinction means.
[Claim 21] It is the control approach characterized by to have the 2nd change step which changes a change step, and the 1st communicate mode and 2nd communicate mode about said communication facility which changes the 1st standby mode and 2nd standby mode at the time of standby in the control approach which controls equipment equipped with communication facility, and to

be carried out by the change in said 1st change step and the change in said 2nd change step interlocking. [1st]
[Claim 22] In the storage which stored the program including the control approach which controls equipment equipped with communication facility which can realize a computer said control approach The 1st change step which changes the 1st standby mode and 2nd standby mode at the time of standby, It is the storage characterized by having the 2nd change step which changes the 1st communicate mode and 2nd communicate mode about said communication facility, and being carried out by the change in said 1st change step and the change in said 2nd change step interlocking.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the storage which memorized the program for controlling the equipment which has communication facility, its control approach, and its equipment.
[0002]
[Description of the Prior Art] What connects facsimile apparatus to information processing terminals, such as a personal computer, through cable interfaces, such as bidirectional parallel ports (IEEE 1284 conformity), such as Centronics, or Universal Serial Bus (Universal Serial BUS (USB)), is known from the former.
[0003] By such system, the information processing terminal had the leadership and control and transfer of data were performed with the gestalt that facsimile apparatus returns a response to a command from an information processing terminal.
[0004] And such facsimile apparatus is made not to shift to a power-saving standby condition in the condition of having connected with the information processing terminal, from the need of returning a response to a command from an information processing terminal.
[0005]
[Problem(s) to be Solved by the Invention] Therefore, in the above-mentioned conventional system, since the facsimile apparatus in the condition of having connected with the information processing terminal was not able to shift to a power-saving standby condition, useless power was consumed.
[0006] Moreover, in order always to have to return a response to a command from an information processor, changing the mode at the time of standby was not even considered.
[0007] This invention is made paying attention to this point, and aims at offering the storage which memorized the program for controlling the equipment which has the communication facility which can change the mode at the time of standby efficiently, its control approach, and its equipment.
[0008] Moreover, other purposes of this invention are interlocking modification in the mode about communication facility, and modification in the mode at the time of standby.
[0009]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, the image processing system of this invention The information processor which can perform directions of operation to the image processing system concerned by wireless, and the usual power consumption mode which usually transmit and receive data in the state of power consumption, The wireless mode means for switching which switches said information processor and the low-power mode which transmit and receive some data among said data in the state of a low power, Usually, the standby status-switching means which switches a standby condition and a power-saving standby condition with less power consumption than this usual standby condition, In the condition that said mode is said low-power mode, and said standby condition is in said power-saving standby condition From said low-power mode, said mode is characterized by said standby condition having said power-saving standby condition to said power control means controlled to usually switch to a standby condition, when [said] usually switched to power consumption mode.

[0010] In order to attain the above-mentioned purpose, moreover, the image processing system control approach of this invention The information processor which can perform directions of operation to the image processing system concerned by wireless, and the usual power consumption mode which usually transmit and receive data in the state of power consumption, The wireless mode change-over step which switches said information processor and the low-power mode which transmit and receive some data among said data in the state of a low power, Usually, the standby status-switching step which switches a standby condition and a power-saving standby condition with less power consumption than this usual standby condition, In the condition that said mode is said low-power mode, and said standby condition is in said power-saving standby condition From said low-power mode, said mode is characterized by said standby condition having said power-saving standby condition to said power control step controlled to usually switch to a standby condition, when [said] usually switched to power consumption mode.

[0011] In order to attain the above-mentioned purpose, furthermore, the storage of this invention In the storage which stored the program including the image processing system control approach which controls an image processing system which can realize a computer said image processing system control approach The information processor which can perform directions of operation to the image processing system concerned by wireless, and the usual power consumption mode which usually transmit and receive data in the state of power consumption, The wireless mode change-over step which switches said information processor and the low-power mode which transmit and receive some data among said data in the state of a low power, Usually, the standby status-switching step which switches a standby condition and a power-saving standby condition with less power consumption than this usual standby condition, In the condition that said mode is said low-power mode, and said standby condition is in said power-saving standby condition From said low-power mode, said mode is characterized by said standby condition having said power-saving standby condition to said power control step controlled to usually switch to a standby condition, when [said] usually switched

to power consumption mode.
[0012] In order to attain the above-mentioned purpose, moreover, the equipment of this invention The 1st change means which changes the 1st standby mode and 2nd standby mode at the time of standby in equipment equipped with communication facility, It is characterized by having the 2nd change means which changes the 1st communicate mode and 2nd communicate mode about said communication facility, and being carried out by the change by said 1st change means and the change by said 2nd change means interlocking.
[0013] In order to attain the above-mentioned purpose, furthermore, the control approach of this invention The 1st change step which changes the 1st standby mode and 2nd standby mode at the time of standby in the control approach which controls equipment equipped with communication facility, It is characterized by having the 2nd change step which changes the 1st communicate mode and 2nd communicate mode about said communication facility, and being carried out by the change in said 1st change step and the change in said 2nd change step interlocking.
[0014] In order to attain the above-mentioned purpose, furthermore, the storage of this invention In the storage which stored the program including the control approach which controls equipment equipped with communication facility which can realize a computer said control approach The 1st change step which changes the 1st standby mode and 2nd standby mode at the time of standby, It is characterized by having the 2nd change step which changes the 1st communicate mode and 2nd communicate mode about said communication facility, and being carried out by the change in said 1st change step and the change in said 2nd change step interlocking.
[0015]
[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained to a detail based on a drawing.
[0016] Drawing 1 is the block diagram showing the outline configuration of the image processing system 201 which constitutes the image processing system concerning the gestalt of 1 operation of this invention, and assumes facsimile apparatus as an image processing system with the gestalt of this operation.
[0017] In this drawing, CPU101 is the system control section and controls the image processing system 201 whole. ROM102 stores a control program, an operating system (OS) program, etc. which CPU101 performs. RAM103 consists of SRAM (static RAM) etc. and stores a program control variable etc. Moreover, the set point which the operator registered, the management data of equipment 201, etc. are stored in RAM103, and the various buffer areas for work pieces are prepared. An image memory 104 consists of DRAMs (dynamic RAM) etc., and accumulates image data. With the gestalt of this operation, each control program stored in ROM102 performs software control of scheduling, a task switch, etc. under management of OS stored in ROM102.
[0018] A control unit 108 is constituted by various keys, LED (light emitting diode), LCD (liquid crystal display), etc., and performs the various alter operation by the operator, the display of the situation of an image processing system 201 of operation, etc.

[0019] A read station 107 performs various image processings, such as binary-ized processing and halftone processing, through the image-processing control section which does not illustrate the picture signal which read the manuscript optically and was changed into electric image data with CS image sensors (contact type image sensor), and the reading control section 106 outputs high definition image data. In addition, with the gestalt of this operation, the reading control section 106 supports both the control systems of the sheet reading control system which reads while conveying a manuscript, and the book reading control system which scans the manuscript in a manuscript base.

[0020] The record control section 113 performs various image processings, such as smoothing processing, record concentration amendment processing, and color correction, through the image-processing control section which is not illustrated to the image data printed by the color printer 114 which consists of a laser beam printer, an ink jet printer, etc., changes them into high definition image data, and is outputted to a color printer 114.

[0021] The communications control section 109 is constituted by MODEM (modem), NUC (network control unit), etc. With the gestalt of this operation, it connects with the communication line (PSTN) 203 of an analog, and the communications control section 109 is performing line control, such as communications control in T30 protocol, call origination to a communication line, and a call in. Moreover, the timed-recording control section 110 is constituted by Voice IC (integrated circuit), the voice sound recording playback control section (not shown), etc., and offers an answering machine function.

[0022] The sign decryption processing section 112 performs the sign decryption processing and enlarging-or-contracting processing of image data which are treated with an image processing system 201. Moreover, the resolution transform-processing section 111 performs resolution conversion control of milli inch resolution conversion of image data etc. In addition, also in the resolution transducer 111, enlarging-or-contracting processing of image data is possible. Furthermore, the data-conversion section 105 performs conversion of image data, such as analyses, such as a Page Description Language (PDL), and CG (computer graphics) expansion of character data.

[0023] The Bluetooth control section 115 performs communications control of Bluetooth, performs protocol control according to the specification of Bluetooth, makes a packet the command from the Bluetooth control task (refer to drawing 4 mentioned later) which CPU101 performs, and it transmits to the Bluetooth baseband processing section 116, or it transmits to CPU101 conversely by making the packet from the Bluetooth baseband processing section 116 into a command.

[0024] The Bluetooth baseband processing section 116 performs frequency-hopping processing of Bluetooth, and the assembly and decomposition processing of a frame.

[0025] The 2.4GHz radio-frequency head 117 transmits and receives the electric wave of the 2.4GHz band which Bluetooth uses.

[0026] An expansion slot 120 is a slot for inserting an option board in an image processing system 201, and can attach various option boards, such as an extended image memory, and a SCSI (Small Computer System Interface) board, a video interface board, into this slot 120.

[0027] The power control section 118 makes this system power-saving standby (ESS) mode, or returns it to the normal mode from power-saving mode. About this power control section 118, it mentions later using drawing 2 .

[0028] A power supply section 119 supplies a power source to this whole system containing a color printer 114.

[0029] The information processing terminal 202 performs the communication link according to facsimile apparatus 202 and Bluetooth specification.

[0030] Drawing 2 is the block diagram showing the power control section 118 and the configuration of the circumference of it.

[0031] When processing of a certain fixed time amount, reading, record, a communication link, a key input, etc. is not performed, facsimile apparatus 201 becomes power-saving standby (ESS) mode. If it shifts to power-saving standby (ESS) mode, CPU101 having been in sleeping, such as a hold mode, and having become power-saving (ESS) mode at the power control section 118 will be notified.

[0032] About a Bluetooth interface, in Piconet in which facsimile apparatus 201 has participated, except when exchanging a command, facsimile apparatus 201 is made to shift to the Park mode which is the power-saving mode of Bluetooth. Therefore, when facsimile apparatus 201 is in power-saving (ESS) mode, in all Piconet(s) that have participated, it is Park mode.

[0033] If it gets to know having become power-saving (ESS) mode, the power control section 118 will make the preparations which receive the signal leading to [from power-saving (ESS) mode] a return, and will stop the current supply of a drive system to a power supply section 119 with the control signal 133. In addition, you may make it also suspend the current supply to a color printer 114 or the reading section 107 at this time.

[0034] The signal 132 from the Bluetooth control section 115 which shows that it returned to "Active" is also included from Park mode in Piconet in which the facsimile apparatus 201 other than the signal 135 which shows that ringing received a message, and the signal 136 which shows that the hand set became off-hook has participated from the signal 134 which shows that the signal which becomes the factor which makes it return to the normal mode from power-saving (ESS) mode has the manuscript which should be read in the reading section 107 and the telephone line. Moreover, also when there is a certain key input from a control unit 108, you may make it make it return to the normal mode from power-saving (ESS) mode in addition to this.

[0035] If it detects that the signal used as the factor which makes it return from said power-saving (ESS) mode became active, the power control section 118 will transmit the interrupt signal 131 to which CPU101 is returned from sleeping to CPU101. By this, CPU101 returns to the normal mode. Moreover, to a power supply section 119, the power source which had suspended supply with the control signal 133 is revived.

[0036] Drawing 3 is the block diagram showing an example of the configuration of the image processing system of the gestalt of this operation.

[0037] As shown in this drawing, the system of the gestalt of this operation is

constituted by the facsimile apparatus 201 which is an image processing system, the information processing terminal 202 represented by the personal computer (PC), said communication line 203, and the other party terminals (for example, facsimile apparatus, PC, etc.) 204 connected to this communication line 203.
[0038] It connects with the communication line 203 and facsimile apparatus 201 can perform the other party terminal 204 and facsimile communication. Moreover, facsimile apparatus 201 is connectable also with the information processing terminal 202 on radio. With the gestalt of this operation, since the wireless part is set to Bluetooth, if the unit for a Bluetooth communication link is built in the information processing terminal 202 or the unit for a Bluetooth communication link is connected to the information processing terminal 202, the exchange of transmission and reception of image data, various data, or a program can also be performed between the information processing terminals 202. Furthermore, with the gestalt of this operation, although facsimile apparatus is adopted as an image processing system 201, even if you may be multifunction equipment equipped not only with this but for example, scanner ability and printer ability or the E-Mail terminals with which scanner ability and printer ability were added are other image processing systems, it does not shift from the essence of this invention.
[0039] Drawing 4 is drawing showing an example of the layered structure of the control software which CPU101 of facsimile apparatus 201 performs.
[0040] As shown in this drawing, there are five kinds of control tasks, the Scanner control task 301, the Printer control task 302, the Fax control task 303, the MMI control task 304, and the Phone control task 305, in the top layer of the control software, and, as for each control tasks 301-305, device control of facsimile apparatus 201 and control of a user operating part are performed to it.
[0041] There is a job-control-language trawl task 306 in the lower layer, and the job-control-language trawl task 306 analyzes and distributes the job from the event control task 307 which is the lower layer, and carries out a queuing to the control tasks 301-305 of said top layer.
[0042] The event control task 307 analyzes the event received from the Bluetooth control task 308 of the low order, and performs the queuing of a command to the control task which corresponds among the control tasks 301-305 of said top layer.

[0043] The Bluetooth control task 308 will hand over the information to the Bluetooth controller 309 of the lower layer, if the information which it is going to transmit to the information processing terminal 202 is received from the event control task 307 of the high order layer. Moreover, the Bluetooth control task 308 will hand over information to the event control task 307 of the high order layer, if the information addressed to a high order layer is received from the Bluetooth controller 309 of the lower layer. The thing in the mode which delivers and receives such information is called command through mode.
[0044] Moreover, when the information which it is going to transmit to the information processing terminal 202 is received from the event control task 307 of the high order layer and it judges that a response can be immediately returned to a high order layer by decision of this task 308 self, there is no Bluetooth control task 308 about passing information to a lower layer, and it returns a response to a

high order layer. The thing in the mode which delivers and receives such information is called command return mode.

[0045] The Bluetooth controller 309 forms the so-called air interface which changes the information received from the high order layer of the Bluetooth controller 309 with the Bluetooth driver 310 into the radio intelligence according to "Generic Access Profile" of Bluetooth, and "Serial Port Profile" which is the subordinate concept. About an air interface, since it is a well-known technique, the explanation is omitted.

[0046] OS311 is the operating system of the device inclusion mold of facsimile apparatus 201, and has the well-known function to perform task switching to each hierarchy of the above-mentioned control software, event management, memory management, etc.

[0047] Drawing 5 is drawing showing an example of the layered structure of the control software which CPU (not shown) of the information processing terminal 202 performs.

[0048] In this drawing, transfer of the control information between the information processing terminal 202 and facsimile apparatus 201 is made by delivering the information which the facsimile manager 401 in the top layer, the printer application 404, the scanner application 406, etc. generate to an interface module 408 via an inbox 402, an out-box 403, a printer driver 405, and the scanner driver 407. An interface module 408 manages a transfer of files, such as a facsimile image to transmit and an image to scan, loading of a facsimile receiving image, a transfer of the image to print, etc. irrespective of whether control is performed by the facsimile manager 410 or it is carried out by one of the drivers.

[0049] The Bluetooth control task 409 will hand over the information to the Bluetooth controller 410 of the lower layer, if the information which it is going to transmit to facsimile apparatus 201 is received from the interface module 408 of the high order layer (processing of operation in command through mode).

[0050] Moreover, the Bluetooth control task 409 returns a response to a high order layer, without passing information to a lower layer, when the information which it is going to transmit to facsimile apparatus 201 is received from the interface module 408 of the high order layer and it judges that a response can be immediately returned to a high order layer by decision of this task 409 self (processing of operation in command return mode).

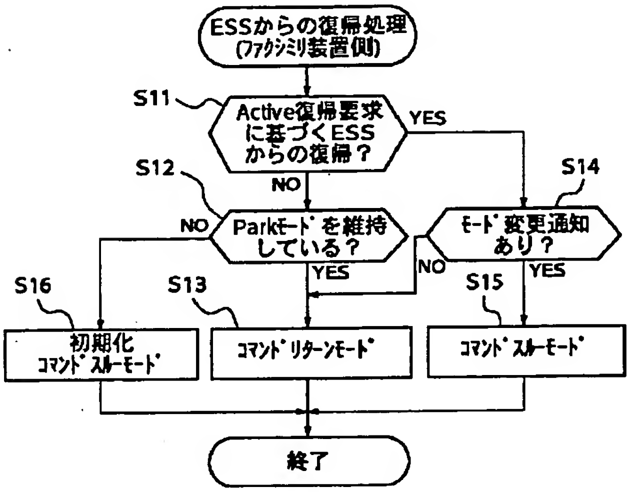
[0051] The Bluetooth controller 410 forms the so-called air interface which changes the information received from the high order layer of the Bluetooth controller 410 with the Bluetooth driver 411 into the radio intelligence according to "Generic Access Profile" of Bluetooth, and "Serial Port Profile" which is the subordinate concept.

[0052] OS412 is an operating system installed in the information processing terminal 202, and manages the base part in the control service of each hierarchy of the above-mentioned control software, or application.

[0053] Drawing 6 is drawing showing the communication link flow between the information processing terminals 202 and facsimile apparatus 201 when starting the power source of the information processing terminal 202, and transition of each operating state of each equipment 201,202 until each equipment 201,202

shifts to a standby condition from initialization processing is shown in this drawing. At this time, the power source of facsimile apparatus 201 shall already be started.
[0054] If the power source of the information processing terminal 202 starts, the facsimile manager 401 corresponding to Bluetooth will start, and processing for connecting with facsimile apparatus 201 will be performed.
[0055] That is, in order to check that it is in the condition that the facsimile apparatus 201 of a connection place can communicate, the Bluetooth control task 409 transmits an Inquiry sending-out demand to the Bluetooth controller 410. At this time, the "Class of Device" information in the Inquiry command is transmitted as a "serial communication terminal."
[0056] If an Inquiry sending-out demand is received, the Bluetooth controller 410 will perform an Inquiry procedure according to handshaking of Bluetooth, and will notify the result ("Inquiry Result") to the Bluetooth control task 409. If "Inquiry Result" is received, the Bluetooth control task 409 It judges whether facsimile apparatus 201 and connection are possible from the contents. When it can connect While specifying the address of facsimile apparatus 201 and performing a connection request to the Bluetooth controller 410 From the contents of "Inquiry Result", connection displays a message to that effect on the display (not shown) of the information processing terminal 202, when the facsimile apparatus of failure or a connection place is not found.
[0057] If the Bluetooth controller 410 receives a connection request, the connection who uses "Serial Port Profile" based on the specification of Bluetooth will be established to the Bluetooth controller 309 of facsimile apparatus 201. And when a connection is established, the Bluetooth controller 410 notifies the result to the Bluetooth control task 409.
[0058] If it detects that the connection with facsimile apparatus 201 has been established from a connection result, the Bluetooth control task 409 will transmit a Ready signal to the facsimile manager 401, and will shift a condition to the command through mode in which the command from the facsimile manager 401 is passed to the Bluetooth controller 410 as it is.
[0059] Moreover, the Bluetooth control task 409 will display it on said display of the information processing terminal 202, if the message of a purport which failed in establishment of a connection is received from a connection result.
[0060] The Bluetooth controller 309 of facsimile apparatus 201 notifies the result of a connection establishment procedure with the information processing terminal 202 to the Bluetooth control task 308. If it checks that the connection has been established from the result of a connection establishment procedure, in order to pass the command from the information processing terminal 202 to the event control task 307 as it is, the Bluetooth control task 308 goes into command through mode, and waits for the command from the information processing terminal 202. On the other hand, when a connection goes wrong, the Bluetooth control task 308 will be in a waiting state until a connection is established.
[0061]

Drawing selection Representative drawing


ESSからの復帰処理
(ﾌｧｸｼﾐﾘ装置側)
S11
Active復帰要求に基づくESSからの復帰？
YES
NO
S12
Parkﾓｰﾄﾞを維持している？
NO
YES
S14
ﾓｰﾄﾞ変更通知あり？
NO
YES
S16
初期化
ｺﾏﾝﾄﾞｽﾙｰﾓｰﾄﾞ
S13
ｺﾏﾝﾄﾞﾘﾀｰﾝﾓｰﾄﾞ
S15
ｺﾏﾝﾄﾞｽﾙｰﾓｰﾄﾞ
終了

[Translation done.]

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2.**** shows the word which can not be translated.
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TECHNICAL FIELD

[Field of the Invention] This invention relates to the storage which memorized the program for controlling the equipment which has communication facility, its control approach, and its equipment.

[Translation done.]

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PRIOR ART

[Description of the Prior Art] What connects facsimile apparatus to information processing terminals, such as a personal computer, through cable interfaces, such as bidirectional parallel ports (IEEE 1284 conformity), such as Centronics, or Universal Serial Bus (Universal Serial BUS (USB)), is known from the former.
[0003] By such system, the information processing terminal had the leadership and control and transfer of data were performed with the gestalt that facsimile apparatus returns a response to a command from an information processing terminal.
[0004] And such facsimile apparatus is made not to shift to a power-saving standby condition in the condition of having connected with the information processing terminal, from the need of returning a response to a command from an information processing terminal.

[Translation done.]

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EFFECT OF THE INVENTION

[Effect of the Invention] As explained above, according to this invention, the mode at the time of standby can be changed efficiently.

[Translation done.]

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] Therefore, in the above-mentioned conventional system, since the facsimile apparatus in the condition of having connected with the information processing terminal was not able to shift to a power-saving standby condition, useless power was consumed.
[0006] Moreover, in order always to have to return a response to a command from an information processor, changing the mode at the time of standby was not even considered.
[0007] This invention is made paying attention to this point, and aims at offering the storage which memorized the program for controlling the equipment which has the communication facility which can change the mode at the time of standby efficiently, its control approach, and its equipment.
[0008] Moreover, other purposes of this invention are interlocking modification in the mode about communication facility, and modification in the mode at the time of standby.

[Translation done.]

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[Translation done.]

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3.In the drawings, any words are not translated.

MEANS

[Means for Solving the Problem] In order to attain the above-mentioned purpose, the image processing system of this invention The information processor which can perform directions of operation to the image processing system concerned by wireless, and the usual power consumption mode which usually transmit and receive data in the state of power consumption, The wireless mode means for switching which switches said information processor and the low-power mode which transmit and receive some data among said data in the state of a low power, Usually, the standby status-switching means which switches a standby condition and a power-saving standby condition with less power consumption than this usual standby condition, In the condition that said mode is said low-power mode, and said standby condition is in said power-saving standby condition From said low-power mode, said mode is characterized by said standby condition having said power-saving standby condition to said power control means controlled to usually switch to a standby condition, when [said] usually switched to power consumption mode.
[0010] In order to attain the above-mentioned purpose, moreover, the image processing system control approach of this invention The information processor which can perform directions of operation to the image processing system concerned by wireless, and the usual power consumption mode which usually transmit and receive data in the state of power consumption,

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] It is the block diagram showing the outline configuration of the image processing system which constitutes the image processing system concerning the gestalt of 1 operation of this invention.
[Drawing 2] It is the block diagram showing the power control section of drawing 1 , and the configuration of the circumference of it.
[Drawing 3] It is the block diagram showing an example of the image processing system configuration of the gestalt of this operation.
[Drawing 4] It is drawing showing an example of the layered structure of the control software which CPU of the image processing system of drawing 1 performs.

[Drawing 5] It is drawing showing an example of the layered structure of the control software which CPU of the information processing terminal of drawing 3 performs.
[Drawing 6] It is drawing showing the communication link flow when starting the image processing system of drawing 3 .
[Drawing 7] It is drawing showing the communication link flow at the time of the transmitting image transfer processing to an information processing terminal from an image processing system in the image processing system of drawing 3 ,
[Drawing 8] It is drawing showing the command flow at the time of the transmitting image transfer processing to an information processing terminal from an image processing system in the image processing system of drawing 3 .
[Drawing 9] It is the flow chart which shows the procedure of the power-source ON processing which the Bluetooth control task of the image processing system of drawing 1 performs.
[Drawing 10] It is the flow chart which shows the procedure of the return processing from ESS which the Bluetooth control task of the image processing system of drawing 1 performs.
[Drawing 11] It is the flow chart which shows the procedure of the power-source ON processing which the Bluetooth control task of the information processing terminal of drawing 3 performs.
[Drawing 12] It is the flow chart which shows the procedure of the transmitting service processing which the Bluetooth control task of the image processing system of drawing 1 performs.

[Drawing 13] It is the flow chart which shows the procedure of the transmitting service processing which the Bluetooth control task of the information processing terminal of drawing 3 performs.

[Description of Notations]

101 CPU
102 ROM
103 RAM
104 Image Memory
105 Data-Conversion Section
106 Reading Control Section
107 Read Station
108 Control Unit
109 Communications Control Section
110 Timed-Recording Control Section
111 Resolution Transform-Processing Section
112 Sign Decryption Processing Section
113 Record Control Section
114 Color Printer
115 Bluetooth Control Section
116 Bluetooth Baseband Processing Section
117 2.4GHz Radio-frequency Head
118 Power Control Section
119 Power Supply Section
120 Expansion Slot
B Bus
131 Sleep Mode Discharge Signal to CPU
132 Return Factor Signal from ESS Based on Active Return Demand
133 Control Signal to Power Supply Section
201 Facsimile Apparatus
202 Information Processor
203 Communication Line
204 Other Party Terminal
301 Scanner Control Task
302 Printer Control Task
303 Fax Control Task
304 MMI Control Task
305 Phone Control Task
306 Job-Control-Language Trawl Task
307 Event Control Task
308,409 Bluetooth control task
309,410 Bluetooth controller
310,411 Bluetooth driver
311,412 OS
401 Facsimile Manager
402 Inbox
403 Out-box

404 Printer Application
405 Printer Driver
406 Scanner Application
407 Scanner Driver

[Translation done.]

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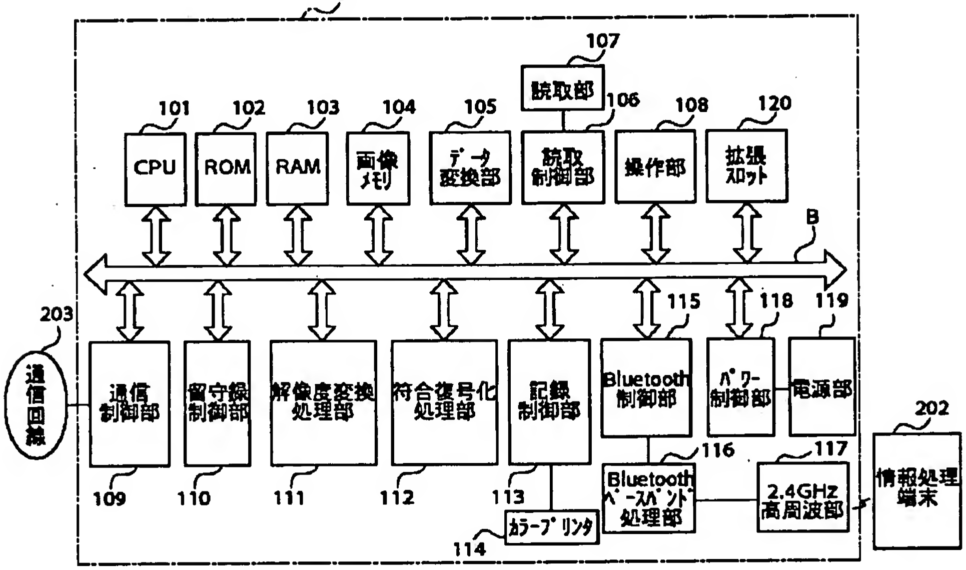
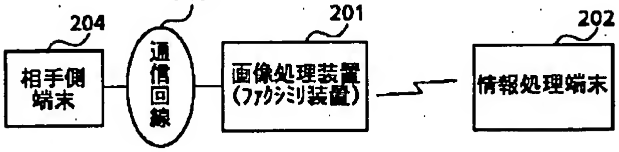
DRAWINGS

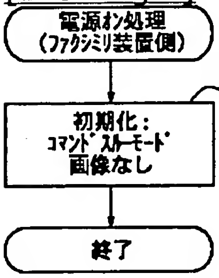
[Drawing 1]


201
107
読取部
101
102
103
104
105
106
108
120
CPU
ROM
RAM
画像メモリ
データ変換部
読取制御部
操作部
拡張スロット
B
203
通信回線
115
118
119
通信制御部
留守録制御部
解像度変換処理部
符合復号化処理部
記録制御部
Bluetooth制御部
パワー制御部
電源部
202
116
117
情報処理端末
Bluetoothベースバンド処理部
2.4GHz高周波部
109
110
111
112
113
カラープリンタ
114

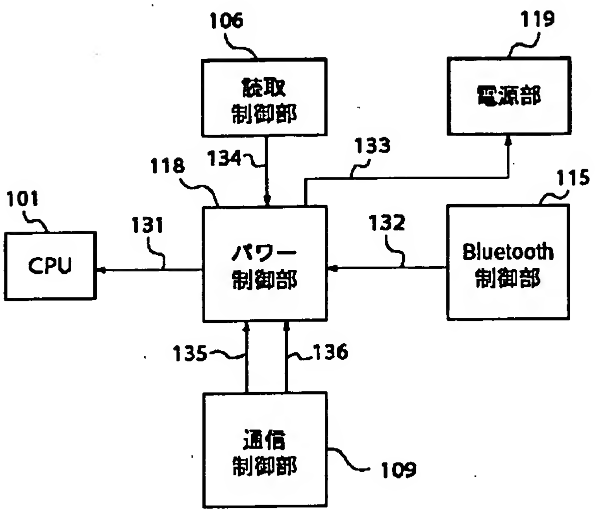
[Drawing 3]


204
203
201
202
相手側端末
通信回線
画像処理装置（ファクシミリ装置）
情報処理端末

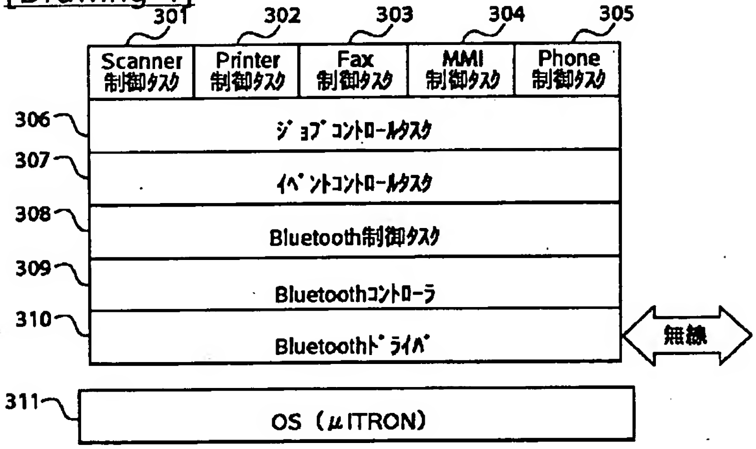
[Drawing 9]


電源オン処理（ファクシミリ装置側）
S1
初期化：コマンドスルーモード画像なし
終了

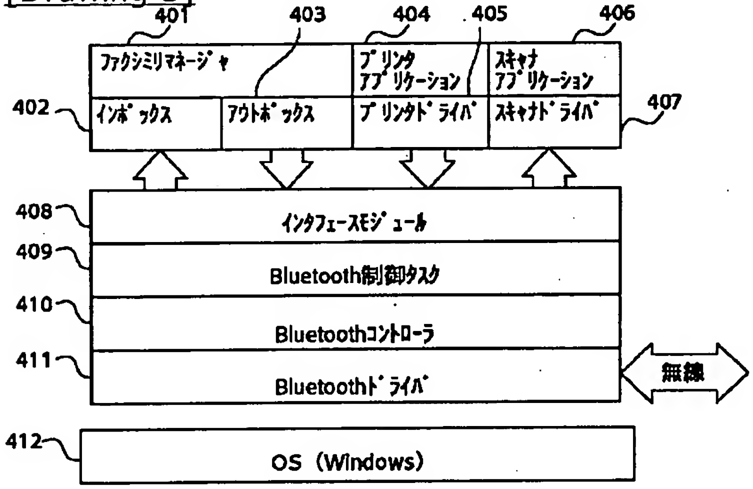
[Drawing 2]


106
読取
制御部
119
電源部
133
134
118
115
101
131
132
CPU
パワー
制御部
Bluetooth
制御部
135
136
通信
制御部
109

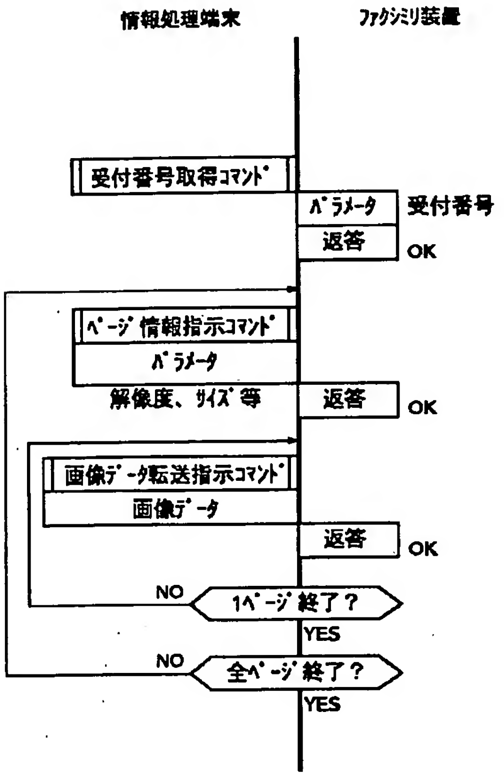
[Drawing 4]


301
302
303
304
305
Scanner
制御ﾀｽｸ
Printer
制御ﾀｽｸ
Fax
制御ﾀｽｸ
MMI
制御ﾀｽｸ
Phone
制御ﾀｽｸ
306
ｼﾞｮﾌﾞｺﾝﾄﾛｰﾙﾀｽｸ
307
ｲﾍﾞﾝﾄｺﾝﾄﾛｰﾙﾀｽｸ
308
Bluetooth制御ﾀｽｸ
309
Bluetoothｺﾝﾄﾛｰﾗ
310
Bluetoothﾄﾞﾗｲﾊﾞ
無線
311
OS（μITRON）

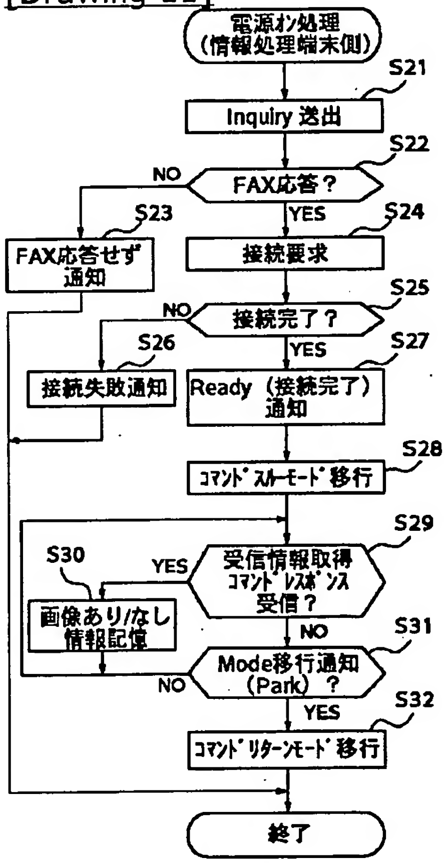
[Drawing 5]


401
403
404
405
406
ﾌｧｸｼﾐﾘﾏﾈｰｼﾞｬ
ﾌﾟﾘﾝﾀ
ｱﾌﾟﾘｹｰｼｮﾝ
ｽｷｬﾅ
ｱﾌﾟﾘｹｰｼｮﾝ
402
ｲﾝﾎﾞｯｸｽ
ｱｳﾄﾎﾞｯｸｽ
ﾌﾟﾘﾝﾀﾄﾞﾗｲﾊﾞ
ｽｷｬﾅﾄﾞﾗｲﾊﾞ
407
408
ｲﾝﾀﾌｪｰｽﾓｼﾞｭｰﾙ
409
Bluetooth制御ﾀｽｸ
410
Bluetoothｺﾝﾄﾛｰﾗ
411
Bluetoothﾄﾞﾗｲﾊﾞ
無線
412
OS（Windows）

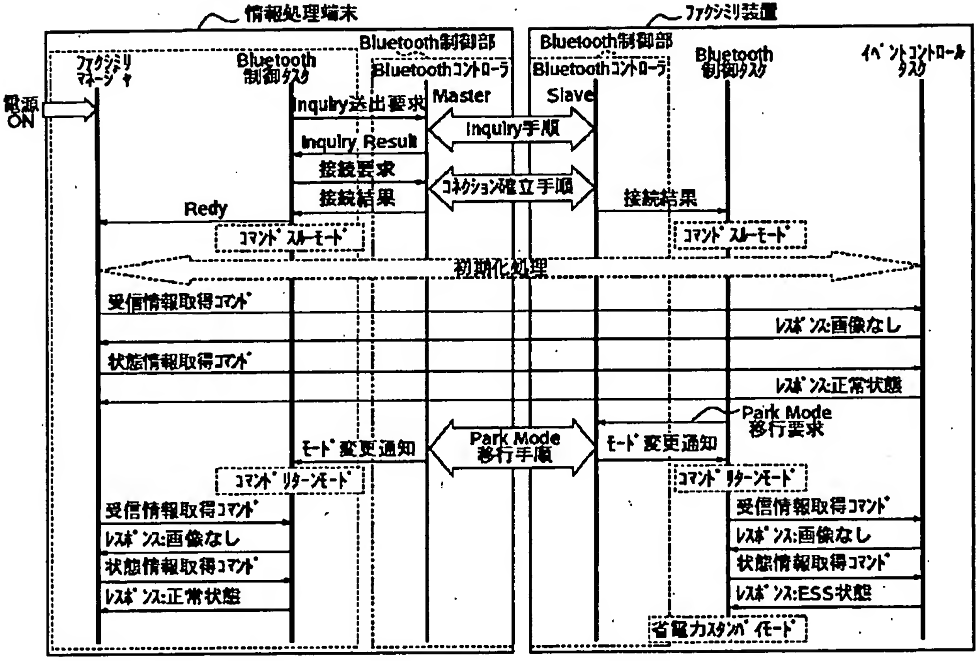
[Drawing 8]


情報処理端末
ﾌｧｸｼﾐﾘ装置
受付番号取得ｺﾏﾝﾄﾞ
ﾊﾟﾗﾒｰﾀ
受付番号
返答
OK
ﾍﾟｰｼﾞ情報指示ｺﾏﾝﾄﾞ
ﾊﾟﾗﾒｰﾀ
解像度、ｻｲｽﾞ等
返答
OK
画像ﾃﾞｰﾀ転送指示ｺﾏﾝﾄﾞ
画像ﾃﾞｰﾀ
返答
OK
NO
1ﾍﾟｰｼﾞ終了？
YES
NO
全ﾍﾟｰｼﾞ終了？
YES

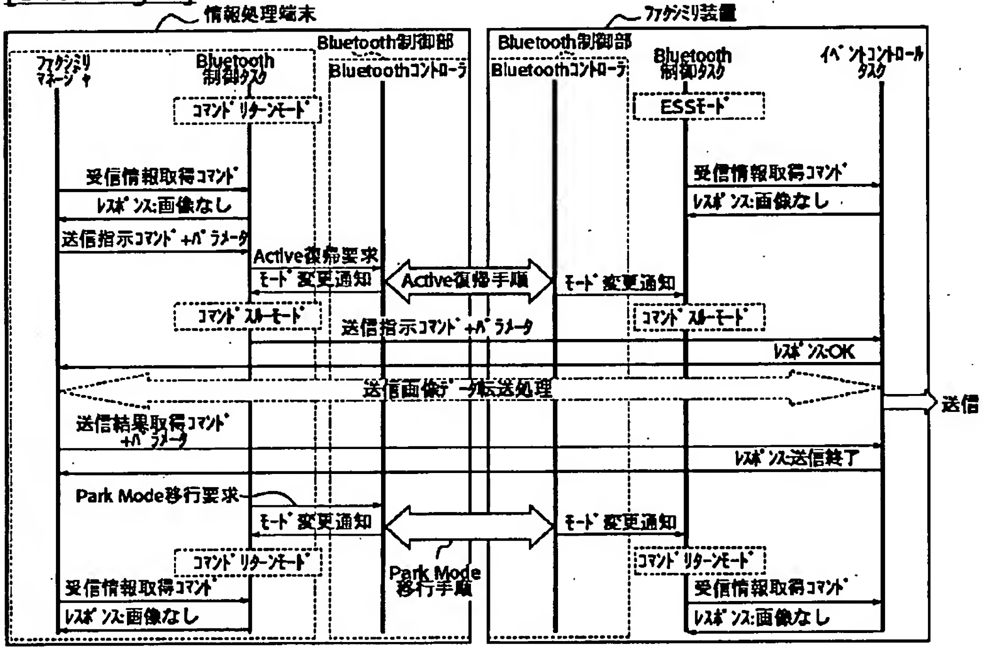
[Drawing 11]


電源ｵﾝ処理
(情報処理端末側)
S21
Inquiry 送出
S22
FAX応答？
NO
YES
S23
FAX応答せず通知
S24
接続要求
S25
NO
接続完了？
YES
S26
接続失敗通知
S27
Ready（接続完了）通知
S28
ｺﾏﾝﾄﾞｽﾙｰﾓｰﾄﾞ移行
S29
S30
YES
受信情報取得ｺﾏﾝﾄﾞﾚｽﾎﾟﾝｽ受信？
画像あり/なし情報記憶
NO
S31
Mode移行通知（Park）？
NO
YES
S32
ｺﾏﾝﾄﾞﾘﾀｰﾝﾓｰﾄﾞ移行
終了

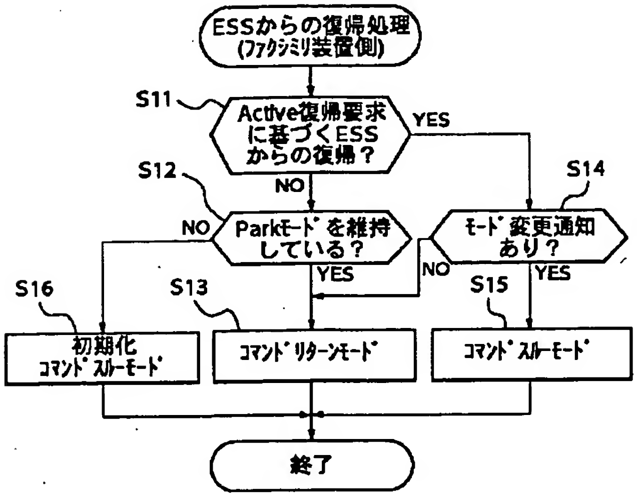
[Drawing 6]


情報処理端末
ファクシミリ装置
Bluetooth制御部
Bluetooth制御部
ファクシミリマネージャ
Bluetooth制御タスク
Bluetoothコントローラ
Master
Bluetoothコントローラ
Slave
Bluetooth制御タスク
イベントコントロールタスク
電源ON
Inquiry送出要求
Inquiry手順
Inquiry Result
接続要求
コネクション確立手順
接続結果
接続結果
Redy
コマンドスルーモード
コマンドスルーモード
初期化処理
受信情報取得コマンド
レスポンス:画像なし
状態情報取得コマンド
レスポンス:正常状態
Park Mode移行要求
モード変更通知
Park Mode移行手順
モード変更通知
コマンドリターンモード
コマンドリターンモード
受信情報取得コマンド
レスポンス:画像なし
状態情報取得コマンド
レスポンス:正常状態
受信情報取得コマンド
レスポンス:画像なし
状態情報取得コマンド
レスポンス:ESS状態
省電力スタンバイモード

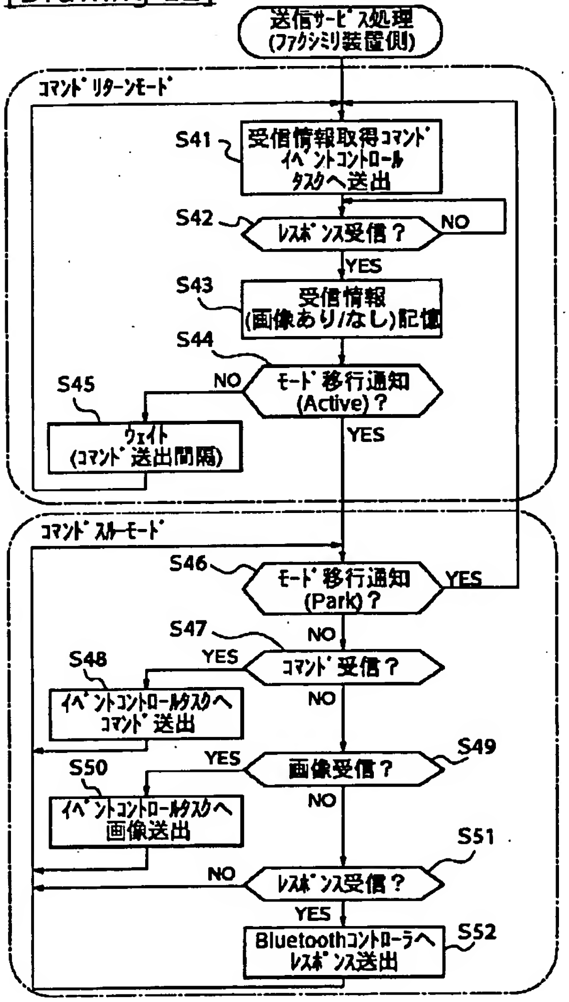
[Drawing 7]


情報処理端末
ファクシミリ装置
Bluetooth制御部
Bluetooth制御部
ファクシミリマネージャ
Bluetooth制御タスク
Bluetoothコントローラ
Bluetoothコントローラ
Bluetooth制御タスク
イベントコントロールタスク
コマンドリターンモード
ESSモード
受信情報取得コマンド
レスポンス:画像なし
受信情報取得コマンド
レスポンス:画像なし
送信指示コマンド+パラメータ
Active復帰要求
モード変更通知
Active復帰手順
モード変更通知
コマンドスルーモード
コマンドスルーモード
送信指示コマンド+パラメータ
レスポンス:OK
送信画像データ転送処理
送信
送信結果取得コマンド+パラメータ
レスポンス送信終了
Park Mode移行要求
モード変更通知
モード変更通知
Park Mode移行手順
コマンドリターンモード
コマンドリターンモード
受信情報取得コマンド
レスポンス:画像なし
受信情報取得コマンド
レスポンス:画像なし

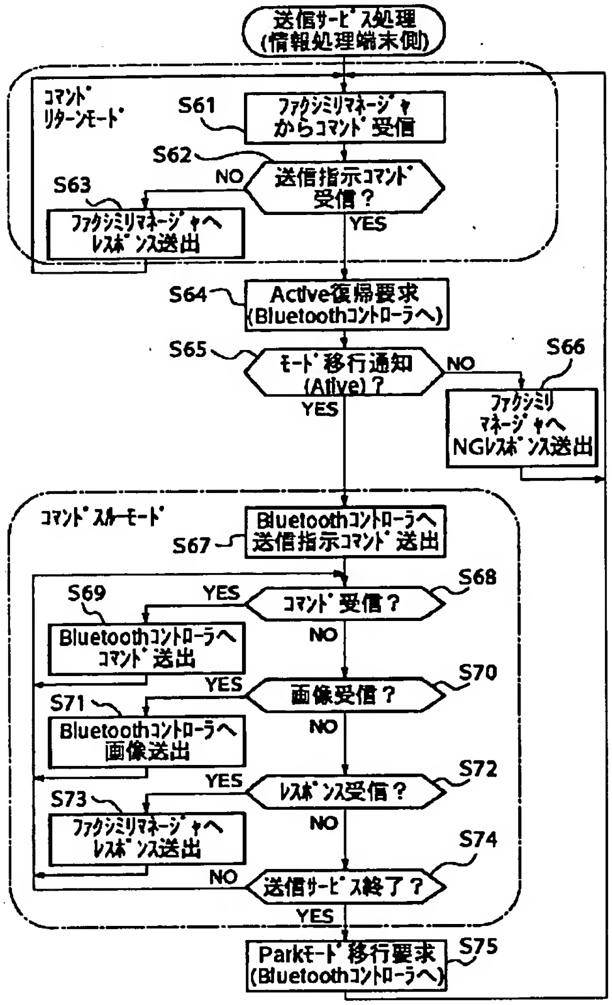
[Drawing 10]


ESSからの復帰処理
(ﾌｧｸｼﾐﾘ装置側)
S11
Active復帰要求に基づくESSからの復帰？
YES
NO
S12
Parkﾓｰﾄﾞを維持している？
NO
YES
S14
ﾓｰﾄﾞ変更通知あり？
NO
YES
S16
S13
S15
初期化
ｺﾏﾝﾄﾞｽﾙｰﾓｰﾄﾞ
ｺﾏﾝﾄﾞﾘﾀｰﾝﾓｰﾄﾞ
ｺﾏﾝﾄﾞｽﾙｰﾓｰﾄﾞ
終了

[Drawing 12]


送信ｻｰﾋﾞｽ処理
(ﾌｧｸｼﾐﾘ装置側)
ｺﾏﾝﾄﾞﾘﾀｰﾝﾓｰﾄﾞ
S41
受信情報取得ｺﾏﾝﾄﾞ
ｲﾍﾞﾝﾄｺﾝﾄﾛｰﾙ
ﾀｽｸへ送出
S42
ﾚｽﾎﾟﾝｽ受信？
NO
YES
S43
受信情報
(画像あり/なし)記憶
S44
ﾓｰﾄﾞ移行通知
(Active)？
S45
NO
ｳｪｲﾄ
(ｺﾏﾝﾄﾞ送出間隔)
YES
ｺﾏﾝﾄﾞｽﾙｰﾓｰﾄﾞ
S46
ﾓｰﾄﾞ移行通知
(Park)？
YES
S47
NO
S48
YES
ｺﾏﾝﾄﾞ受信？
ｲﾍﾞﾝﾄｺﾝﾄﾛｰﾙﾀｽｸへ
ｺﾏﾝﾄﾞ送出
NO
S49
S50
YES
画像受信？
ｲﾍﾞﾝﾄｺﾝﾄﾛｰﾙﾀｽｸへ
画像送出
NO
S51
NO
ﾚｽﾎﾟﾝｽ受信？
YES
Bluetoothｺﾝﾄﾛｰﾗへ
ﾚｽﾎﾟﾝｽ送出
S52

[Drawing 13]


送信ｻｰﾋﾞｽ処理
(情報処理端末側)
ｺﾏﾝﾄﾞ
ﾘﾀｰﾝﾓｰﾄﾞ
S61
ﾌｧｸｼﾐﾘﾏﾈｰｼﾞｬ
からｺﾏﾝﾄﾞ受信
S62
送信指示ｺﾏﾝﾄﾞ
受信？
NO
YES
S63
ﾌｧｸｼﾐﾘﾏﾈｰｼﾞｬへ
ﾚｽﾎﾟﾝｽ送出
S64
Active復帰要求
(Bluetoothｺﾝﾄﾛｰﾗへ)
S65
ﾓｰﾄﾞ移行通知
(Ative)？
NO
YES
S66
ﾌｧｸｼﾐﾘ
ﾏﾈｰｼﾞｬへ
NGﾚｽﾎﾟﾝｽ送出
ｺﾏﾝﾄﾞｽﾙｰﾓｰﾄﾞ
S67
Bluetoothｺﾝﾄﾛｰﾗへ
送信指示ｺﾏﾝﾄﾞ送出
S68
ｺﾏﾝﾄﾞ受信？
YES
NO
S69
Bluetoothｺﾝﾄﾛｰﾗへ
ｺﾏﾝﾄﾞ送出
S70
画像受信？
YES
NO
S71
Bluetoothｺﾝﾄﾛｰﾗへ
画像送出
S72
ﾚｽﾎﾟﾝｽ受信？
YES
NO
S73
ﾌｧｸｼﾐﾘﾏﾈｰｼﾞｬへ
ﾚｽﾎﾟﾝｽ送出
S74
送信ｻｰﾋﾞｽ終了？
NO
YES
S75
Parkﾓｰﾄﾞ移行要求
(Bluetoothｺﾝﾄﾛｰﾗへ)

[Translation done.]

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